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Z. Jason Geng

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SUITE 150

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EXAMINER

PETERSON, CHRISTOPHER K

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## **DETAILED ACTION**

### ***Response to Amendment***

The Amendment After Final Rejection filed on 4/13/2009 has been received and made of record. Claims 32 - 36 are pending in this application.

### ***Response to Arguments***

1. Applicant's arguments filed 4/13/2009 have been fully considered but they are not persuasive.

First, in regard to claim 32, the Applicant argues that Hasegawa (US Patent # 5,014,121) and Takata (US Patent Pub. # 2001/0002695) references do not teach "three separate color image data sets based on the reflected light, the three separate color image data sets providing said 3D image data of the object" (See Remarks, Pg. 18). The Examiner respectfully disagrees. Specifically, noting the Hasegawa reference, Fig. 1, 7 and (Col. 4, lines 16 – 33) shows three separate color image data sets. Hasegawa teaches an image sensor (image sensor 4) configured to receive reflected light from said object and to generate three separate color image data sets (frame memory 20(R), 21(G), and 22(B)) based on said reflected light (Col. 4, lines 16 – 33). Hasegawa (Fig. 7) teaches a 3-CCD system. Takata reference, Fig. 1, 2, and Para 59 and 61 – 65 shows taking three separate color image data sets and creating 3D image data of an object. Applicant argues the recitations of claim 32 provide for a system that eliminates crosstalk between multiple lighting patterns within the same field

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cycle, while maintaining a simplified multi- spectrum projection mechanism with high image collection rates. Hasegawa clearly teaches said image sensor (4) is configured to eliminate cross talk between said sequential color projections (8) by allowing for a sequential exposure of said image sensor (4) within a single frame cycle, said sequential exposure corresponding with said sequential color projections (8) (Col. 4, line 60 – Col. 5, line 35). Hasegawa teaches a timing structure shown in figure 2. The filter disc (8) rotates and produces a signal PS once per revolution. The PR signal causes the CCD to read out the specific color and multiplexer (18) directs the image data to the proper frame memory (20(R), 21(G), and 22(B)). By sequentially projecting a specific color (RGB) and synchronizing the readout Hasegawa eliminates cross talk between the three colors. Therefore this limitation was not analyzed by the Examiner. Takata reference was used to show a 3-CCD image sensor can create XYZ coordinate image data or 3D image data. Therefore it would have been obvious to take the separate color image data from Hasegawa to the phase value calculation means (9) of Takata to produce 3D image data. As for the limitation of a simplified multi- spectrum projection mechanism with high image collection rates, the Examiner does not read this limitation in the claim language set forth in the claim set dated 4/13/2009. For the above reasons, the Examiner believes the Hasegawa and Takata references do teach the limitations of claim 32.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER K. PETERSON whose telephone number is (571)270-1704. The examiner can normally be reached on Monday - Friday 6:30 - 4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Sinh can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. K. P./  
Examiner, Art Unit 2622  
20 April 2009

/Sinh N Tran/  
Supervisory Patent Examiner, Art Unit 2622